UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,811	07/17/2003	Alistair Edwin May	8054.010.NPUS00	8991

28694 7590 07/13/2007

NOVAK DRUCE & QUIGG, LLP
1300 EYE STREET NW
SUITE 1000 WEST TOWER
WASHINGTON, DC 20005

EXAMINER	
SHERMAN, STEPHEN G	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
07/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10620811	7/17/2003	MAY, ALISTAIR EDWIN	8054.010.NPUS00

NOVAK DRUCE & QUIGG, LLP
1300 EYE STREET NW
SUITE 1000 WEST TOWER
WASHINGTON, DC 20005

EXAMINER	
Stephen G. Sherman	
ART UNIT	**PAPER**
2629	20070706

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

The Reply Brief filed June 11, 2007 was noted by the examiner, and is being placed in the file. A Supplemental Examiner Answer is also enclosed with the Examiner's signature, which was missing in the previous Examiner Answer. In response to the Reply Brief, the examiner would like to state that although the applicant argues that the radio channel has to be the medium over which a radio wave is propagated, there is not a limitation in the claim defining that this is what is meant by radio channel. The examiner interpreted that the antenna is a radio channel in a physical sense because all of the signals must be sent through the antenna and thus the antenna is at least part of the claimed radio channel, thus making the interpretation proper. Further on Page 3, lines 3-7 the applicant states that this interpretation is inconsistant with claim 2, because the Examiner's Answer fails to explain how the antenna would sense a physical characteristic of itself. This, however, would not be the case because as stated in the rejection, the hand detection circuit 126 is the radio channel sensor. Thus, the hand detection circuit 126 senses the capacitance, i.e. physical characteristic, of the antenna. Therefore, the examiner did not need to explain how the antenna would sense a physical characteristic of itself because the hand detection circuit senses the physical characteristic. Thus the applicant is wrong that the new interpretation of the antenna as constituing the radio channel is irreconcilable and inconsistant with claim 2. The applicant also argues on Page 3, lines 25-29 that the capacitive antenna 144 is inside the RF circuit and thus considered part of the RF circuit and not a radio channel. This argument by the applicant only strengthens the examiner's position since the applicant notes that it is clear in Junod that the antenna is used for transmitting RF waves and considered part of the RF circuit and thus can be considered a radio channel. The fact that the RF circuit is not connected to the antenna is not important because if the antenna is a "radio channel" it is always a "radio channel" even when the RF circuit is disconnected. Further, Junod discloses in the last line of paragraph [0051] that the RF circuit can be left on all the time, and also the last sentence of paragraph [0044] states that the RF circuit could be peranently connected, which would mean that even if the applicant is right that the antenna is not a radio channel when the RF circuit is not connected (which is clearly wrong as explained above), Junod discloses that the RF circuit is connected all the time, meaning that the antenna would always be a "radio channel".

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/620,811
Filing Date: July 17, 2003
Appellant(s): MAY, ALISTAIR EDWIN

Vincent M. DeLuca
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5 January 2007 appealing from the Office action mailed 24 July 2006.

(1) Real Party in Interest

The real party ion interest in this case is Cambridge Silicon Radio Ltd. Of Cambridge, United Kingdom.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2002/0126094	Junod et al.	9-2002
US 2002/0021278	Hinckley et al.	2-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6, 13, 15-17 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Junod et al. (US 2002/0126094).

Regarding claim 1, Junod et al. disclose a radio-capable device (Figure 1, mouse 10), comprising:

a data collection unit for collecting data (Figure 8, modulator 136. Paragraph [0050] states that the modulator receives a data signal indicating mouse movements and button presses on a line 138.), and

having a normal operating mode, in which it is enabled for collecting data, and a low-power mode (Paragraphs [0051]-[0052]. Since modulator 136 in Figure 8 is part of the RF circuitry 128 of Figure 128, that it has a normal operating mode called the "running mode" in paragraph [0051] and a low-power mode called a "true sleep mode" in paragraph [0052].);

a radio communication unit for transmitting over a radio channel data collected by the data collection unit (Figure 8, items 140, 142 and 144 and paragraph [0050]. Since the modulator 136 receives the data and passes it on to the antenna driver 140, matching circuit 142 and then to the capacitive antenna 144 that the data will then be transmitted by the antenna over a radio channel, where the capacitive antenna 144 is the "radio channel" in a physical sense since the signals from the RF circuitry are sent by the antenna.); and

a radio channel sensor (Figure 7, item 126. The hand detect circuit would be a sensor since it is used detect the presence of a hand and that if an antenna was used to detect the presence of a hand as shown in Figure 7, that the sensor would be a "radio channel sensor" since it would be sensing the capacitance of the antenna 144 which is the "radio channel.") coupled to the radio communication unit for sensing at least one physical characteristic of the radio channel (Paragraph [0049]. Since the antenna is used to detect the presence of a hand to wake up the device from the sleep mode by detecting a change in capacitance of the antenna 144, then the capacitance is the "characteristic" of the "radio channel," i.e. antenna, that is sensed.), and

arranged to cause the data collection unit to enter the normal operating mode if the physical characteristic meets a pre-set threshold (Paragraphs [0024]-[0025] and [0042]-[0043] and [0052]. The capacitance sensed is compared to a reference threshold, i.e. reference capacitance as explained in paragraphs [0024]-[0025], and the output is provided to the controller, where, as described in paragraph [0052], will cause the device to return to normal operating mode.).

Regarding claim 2, Junod et al. disclose a radio-capable device as claimed in claim 1, wherein the radio channel sensor is arranged to sense the said characteristic by means of at least one antenna of the radio communication unit (Paragraph [0049]).

Regarding claim 3, Junod et al. disclose a radio-capable device as claimed in claim 1, wherein the data collection unit is capable of collecting user inputs (Figure 8 and paragraph [0050]).

Regarding claim 6, Junod et al. disclose a radio-capable device as claimed in claim 3, wherein the device is a mouse or a trackball (Figure 1, item 10).

Regarding claim 13, Junod et al. disclose a radio-capable device as claimed in claim 1, wherein the device is a wireless device (Figures 7 and 8, RF circuitry 128 is used to send the data collected to an external device, making the device itself wireless.).

Regarding claim 15, please refer to the rejection of claim 1, and Junod et al. also disclose a radio channel sensor (Figure 7, item 126. The hand detect circuit would be a sensor since it is used detect the presence of a hand and that if an antenna was used to detect the presence of a hand as shown in Figure 7, that the sensor would be a "radio channel sensor" since it would be sensing the capacitance of the antenna 144 which is the "radio channel.") coupled to the radio communication unit for sensing a change in at least one physical characteristic of the radio channel that is indicative of use of the device by a user (Paragraph [0049]. Since the antenna is used to detect the presence of a hand to wake up the device from the sleep mode by detecting a change in capacitance of the antenna 144, then the capacitance is the "characteristic" of the "radio channel," i.e. antenna, that is sensed.); and

arranged to cause that data collection unit to enter the normal operating mode from the low-power mode upon sensing of said change (Paragraphs [0024]-[0025] and [0042]-[0043]. The capacitance sensed is compared to a reference threshold, i.e. reference capacitance as explained in paragraphs [0024]-[0025], and the output is provided to the controller, where, as described in paragraph [0052], will cause the device to return to normal operating mode from a low power mode.).

Regarding claim 16, Junod et al. disclose a radio-capable device as set forth in claim 15, wherein said change in at least one physical characteristic comprises a change in received signal level (Paragraphs [0024]-[0025]. The examiner interprets that

since the device compares values and enters an operating mode based on the difference that the values change and that these values are the signal level.).

Regarding claim 17, please refer to the rejection of claim 1.

Regarding claim 20, Junod et al. disclose a wireless device having a normal operational mode and a low-power standby mode (Figure 1, item 10), comprising:

a transceiver capable of transmitting and receiving signals over a wireless communication channel (Figure 7 and paragraph [0050]. The examiner interprets that since it is stated that the antenna can also receive signals that the same antenna is used to transmit and receive signals, which make the antenna a transceiver.); and

a wireless communication channel sensor (Figure 7, item 126. The examiner interprets that the hand detect circuit would be a sensor since it is used detect the presence of a hand and that if an antenna was used to detect the presence of a hand as shown in Figure 7, that the sensor would be a "wireless communication sensor.") coupled to the transceiver for sensing a change in at least one physical characteristic of signals received over the wireless channel that is indicative of use of the device by a user, and arranged to cause the wireless device to enter the normal operational mode from the low-power mode upon sensing of said change (Paragraphs [0024]-[0025] and [0042]-[0043]. The capacitance sensed is compared to a reference threshold, i.e. reference capacitance as explained in paragraphs [0024]-[0025], where the change in capacitance is the change of a physical characteristic of signals received, and the

output is provided to the controller, where, as described in paragraph [0052], will cause the device to return to normal operating mode from a low power mode.).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 4-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junod et al. (US 2002/0126094).

Regarding claim 4, Junod et al. disclose a radio-capable device as claimed in claim 3.

Junod et al. fail to explicitly teach wherein the data collection unit comprises an optical sensor for sensing movement of the device relative to a surface external to the device.

However, Junod et al. do disclose in the Background of the Invention section in paragraph [0007] that the problem of power consumption in mice is when the mouse has an optical module and is wireless, therefore needing an automatic power saving mode.

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made that the sensing device used in the mouse taught by Junod et al. is an optical one since Junod et al. disclose that an improved automatic power saving mode for an optical wireless mouse is desirable and his invention is an automatic power saving mode for a mouse.

Regarding claim 5, Junod et al. disclose a radio-capable device as claimed in claim 4, wherein the optical sensor is fully or partially disabled in the low-power mode (Paragraph [0052]. The examiner interprets that if only the hand detect circuitry is turned on and the other circuitry is either turned off or in a sleep mode that the optical sensor would also be in a sleep mode or turned off.).

Regarding claim 14, Junod et al. disclose a radio-capable device as claimed in claim 1.

Junod et al. fail to explicitly teach wherein the device is powered by a battery.

However, Junod et al. do disclose in the Background of the Invention section in paragraph [0007] that the problem of power consumption in mice is when the mouse has an optical module and is wireless, making it difficult to make the batteries last more than a couple of months, therefore needing an automatic power saving mode.

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made that the mouse taught by Junod et al. is powered by a battery since Junod et al. disclose that an improved automatic power saving mode for an optical wireless mouse powered by a battery is desirable and his invention is an automatic power saving mode for a mouse.

6. Claims 7-12 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junod et al. (US 2002/0126094) in view of Hinckley et al. (US 2002/0021278).

Regarding claim 7, Junod et al. disclose a radio-capable device as claimed in claim 1.

Junod et al. fail to teach of a radio-capable device wherein the physical characteristic is the tendency of the channel to return to the radio communication unit radio signals transmitted by the radio communication unit.

Hinckley et al. disclose a radio-capable device wherein a physical characteristic is the tendency to return to a radio communication unit radio signals transmitted by the radio communication unit (Figure 1 and paragraph [0042]-[0043]. The examiner

interprets that detecting the signals being reflected is the tendency to return the signals that were transmitted as stated in paragraph [0043] and that the transmitter 264 and receiver 266 are the radio communication unit since they are used for transmitting and receiving data.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the characteristic of the reflection of the signals transmitted by an antenna as taught by Hinckley et al. to replace the capacitive sensing antenna taught by Junod et al. such that the antenna in the mouse of Junod et al. would detect the proximity of the user by the reflection of the signals sent by the antenna in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

Regarding claim 8, Junod et al. disclose a radio-capable device as claimed in claim 1.

Junod et al. fails to teach wherein the physical characteristic is one or more of reflection of radio signals transmitted by the device, absorption of signals transmitted to or by the device, and de-tuning of one or more antennas of the device.

Hinckley et al. disclose of radio-capable device wherein a physical characteristic is one or more of reflection of signals transmitted by the device, absorption of signals transmitted to or by the device, and de-tuning of one or more antennas of the device

(Paragraph [0043]. The examiner interprets that that since reflected signals are received, that this means that they are absorbed and that since the device is capable of determining these reflected waves that the antenna would also be detuned.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the characteristic of the reflection of the signals transmitted by an antenna as taught by Hinckley et al. to replace the capacitive sensing antenna taught by Junod et al. such that the antenna in the mouse of Junod et al. would detect the proximity of the user by the reflection of the signals sent by the antenna in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

Regarding claim 9, Junod et al. and Hinckley et al. disclose a radio-capable device as claimed in claim 7.

Junod et al. also disclose wherein the radio communication unit comprises a transmitter and a receiver which share an antenna (Paragraph [0050]. The examiner interprets that since it is stated that the antenna can also receive signals that the same antenna is used to transmit and receive signals.).

Hinckley et al. also discloses a radio-capable device wherein the sensor is arranged to sense the level of signals transmitted by the transmitter that are received by the receiver (Paragraph [0043] and [0044] and Figure 1 items 262, 264 and 266, where

the radio sensor unit, item 262, senses the level of signals transmitted by 264 and received by 266 as stated in paragraph [0044].).

Regarding claim 10, Junod et al. and Hinckley et al. disclose a radio-capable device as claimed in claim 7.

Hinckley et al. also discloses a radio-capable device wherein the radio communication unit comprises a transmitter having a first antenna and a receiver having a second antenna (Figure 1, items 264 and 266, and Figure 3. The examiner interprets that since the transmitter, 264, and the receiver, 266 are separated in Figure 3 that they would have separate antennas.) and the radio channel sensor (Figure 1, item 262) is arranged to sense the level of signals transmitted by the transmitter that are received by the receiver (Paragraph [0043] and [0044] and Figure 1 items 262, 264 and 266, where the radio sensor unit, item 262, senses the level of signals transmitted by 264 and received by 266 as stated in paragraph [0044].).

Regarding claim 11, Junod et al. ad Hinckley et al. disclose a radio-capable device as claimed in claim 9.

Hinckley et al. also disclose a radio-capable device wherein the characteristic is a change in the sensed level (Paragraph [0044]. The examiner interprets that since the items are in a range level of distance that the level is sensed between the ranges.).

Regarding claim 12, Junod et al. ad Hinckley et al. disclose a radio-capable device as claimed in claim 11.

Hinckley et al. also disclose a radio-capable device wherein the characteristic is a change in the sensed level of greater than a pre-set amount in pre-set time (Paragraphs [0044] and [0046]. The examiner interprets that in paragraph [0044] since there are three ranges of values that a change in the level is sensed and that since the 0 to 7 centimeters range is considered close, that there is a pre-set amount which the level could be less than or greater than. In paragraph [0046] the examiner interprets that the pulsing done a few times per second would be a pre-set time in which the level would be sensed.).

Regarding claim 18, Junod et al. disclose the radio-capable device as set forth in claim 15.

Junod et al. fail to teach wherein said change in at least one physical characteristic comprises a change in received signal level by more than a predetermined amount within a predetermined time

Hinckley et al. disclose a radio-capable device wherein a change in at least one physical characteristic comprises a change in received signal level by more than a predetermined amount within a predetermined time (Paragraphs [0044] and [0046]. The examiner interprets that in paragraph [0044] since there are three ranges of values that a change in the level is sensed and that since the 0 to 7 centimeters range is considered close, that there is a pre-set amount which the level could be less than or

greater than. In paragraph [0046] the examiner interprets that the pulsing done a few times per second would be a pre-set time in which the level would be sensed.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the characteristic of a change in received signal level by more than a predetermined amount within a predetermined time as taught by Hinckley et al. to replace the capacitive sensing taught by Junod et al. such that the antenna in the mouse of Junod et al. would detect the proximity of the user by the reflection of the signals sent by the antenna in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

Regarding claim 19, Junod et al. disclose a radio-capable device as set forth in claim 15.

Junod et al. fail to disclose wherein said radio channel sensor further controls said radio communication unit to transmit dummy signals over said radio channel when said device is in low-power mode.

Hinckley et al. disclose wherein a radio channel sensor further controls a radio communication unit to transmit dummy signals over a radio channel (Figure 1 and paragraphs [0042]-[0043] and paragraph [0046]. The examiner interprets that pulsing the transmitter is transmitting dummy signals over the channel.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to use the method of transmitting dummy signals over a radio channel to detect the proximity of a user as taught by Hinckley et al. to replace the capacitive sensing in the mouse taught by Junod et al. in order to create additional power saving since the hand detection circuit taught by Junod et al. constantly measured the capacitance when the hand detection circuit was connected, however, the power consumed by the sensor taught by Hinckley et al. is limited by using a pulsing method which consumes less power.

(10) Response to Argument

The Rejection of Claims 1-3, 6, 13, 15-17 and 20

1) Junod Does Sense a Physical Characteristic of a Radio Channel

The applicant beings their first argument against the Junod reference under the heading "*Junod Does Not Sense a Physical Characteristic of a Radio Channel*" by stating that the capacitance or inductance of an antenna is not a physical characteristic of a radio channel, as required by the claims. The applicant states that "the antenna when used to sense the presence of a user's hand cannot be used to detect any characteristic of a radio channel, as the RF circuit would be disconnected from the antenna in this mode." The examiner is not disagreeing with the fact that the RF circuit

could be disconnected from the antenna in this mode, even though Junod specifically states in the last sentence of paragraph [0044] that "...could have the RF circuit permanently connected..." However, the applicant is completely misunderstanding the examiner's interpretation of the claims. As stated in the Advisory Action, see lines 10-17, the examiner's interpretation of the claims was that during the sleep mode, the hand detection circuit detects the capacitance of the antenna, where since the same antenna is used for transmitting RF signals from the RF circuit and detection, that the antenna is a "radio channel" in a physical sense, and that the capacitance detected is the "physical characteristic." The claim does not require the detection of RF signals. Therefore, the examiner interpreted by the claim language that since a "**physical** characteristic" is sensed, that the antenna can be a physical "radio channel" and that capacitance is then the physical characteristic. There are no limitations within the claims that prevent the examiner from interpreting the claim language in this manner.

Next the applicant makes reference to the Final Rejection, stating that "the Final Rejection does not dispute that the capacitance or inductance of an antenna is not a physical characteristic of a radio channel as claimed," however, just because this point was not argued by the examiner does not mean that the examiner conceded to this point. The applicant then argues that "the final rejection states that Junod's hand detector must communicate with the RF circuit to cause it to "wake up," and therefore the detector must be capable of sending RF signals otherwise the RF circuit would not be able to identify the wake-up signal" and then the applicant argues this statement by first stating that "Junod nowhere discloses that the hand detector transmits RF signals

to the RF circuit," the applicant secondly argues "even if the hand detection circuit did communicate with the RF circuit, such communication would not be by way of RF signals," and the final argument is that "even if the hand detection circuit were capable of transmitting RF signals, it simply does not follow that the hand detection circuit must detect a physical characteristic of the radio channel as claimed." With respect to these arguments the examiner would like to point out that these arguments are all irrelevant to the claimed invention anyways, because the claim never states that RF signals are the signals being detected. As stated above, the examiner's interpretation of the claimed invention is that during the sleep mode, the hand detection circuit detects the capacitance of the antenna, where since the same antenna is used for transmitting RF signals from the RF circuit and detection, that the antenna is a "radio channel" in a physical sense, and that the capacitance detected is the "physical characteristic." The arguments presented by the examiner in the Final Rejection were based off of the arguments presented by the applicant on June 23, 2006, and the examiner clarified the position taken in the advisory action dated October 2, 2006.

The applicants last argument under this heading begins with the statement that "The final rejection further alleges that the invention as claimed requires 'merely that the radio communication unit transmits the movement and button presses of the mouse. The radio communication unit does not need to receive the incoming radio signals from the antenna'," and then the applicant argues this statement by stating that "the final rejection is incorrect, because claim 1 requires a radio channel sensor coupled to the radio communication unit for sensing at least one physical characteristic of the radio

channel, and ...Consequently, claim 1 requires reception by the radio communication unit of the radio channel in order for the radio channel sensor to detect a physical characteristic of the radio channel. The claims do not mention transmitting of "movement and button presses of the muse" as asserted by the final rejection." The examiner respectfully disagrees. The claim only states that the radio channel sensor is **coupled** to the radio communication unit, and as shown in Figure 7 of Junod, the RF circuit 128 and the hand detect circuit 126 are **coupled**. The claimed does not say anything about requiring reception by the radio communication unit of the radio channel, nor does it state that by doing this the radio channel sensor can detect the physical characteristic of the radio channel. The applicant is confusing their **invention** with the **claim language**. Also, the examiner never stated that the claims mention transmitting movement and button presses of the mouse. The examiner was merely stating for clarification purposes that the claims only state that the radio communication unit transmits "over a radio channel data collected by the data collection unit" where since the invention is a mouse, this data would be the corresponding movement and button presses. The examiner never stated that those words were exactly in the claim, but instead was explained that the radio communication unit, as claimed, is only required to transmit information and not receive information.

2) Junod Does Disclose a Preset Threshold As Claimed in Claim 1

The applicant beings their next argument against the Junod reference under the heading "*Junod Does Not Disclose a Preset Threshold As Claimed in Claim 1*" by stating that the cited paragraphs in the final rejection fail to disclose the limitation of claim 1 requiring the data collection unit to enter the normal operating mode if the sensed physical characteristic of the radio channel meets a preset threshold. The applicant states that "The "reference threshold" mentioned in Junod is used to determine how long it takes for the capacitance connected to the measurement node of the hand detector circuit to charge or discharge. This "reference threshold" however is not used to determine whether to power up the mouse to full power mode. Instead, it is contrast between the capacitance measured when the user's hand is in proximity to the electrode and the capacitance when the user's hand is not near, that is indicative of whether the user's hand is touching the mouse." The examiner respectfully disagrees. The applicant's assertion is completely wrong. Paragraph [0025] states "The capacitance measured when the user's hand is in proximity to the electrodes is contrasted with the capacitance when the user's hand is not near. Without the user's hand, there is no connection to earth ground 26, and the electrodes are floating. Thus, the only capacitance is parasitic capacitance to the internal virtual ground 44 of the device." This means that the value of capacitance measured is compared with a reference value of when a hand is not near the device. Paragraph [0043] further explains that the output from the comparator is provided to the controller and it can be determined the presence of a user. Paragraph [0052] then states that if a hand is not detected then the device remains in low power mode and if a hand is detected the

device "wakes up" and returns to normal operating mode. This means that after the comparison is made, if the capacitance is measured and is greater than the capacitance measured when no one is touching the device, i.e. is above a preset threshold, then the device will go from sleep mode back to normal operating mode.

3) Junod Does Disclose Sensing a Change in Physical Characteristic As Claimed in Claim 15

The applicant beings their next argument against the Junod reference under the heading "*Junod Does Not Disclose Sensing a Change in Physical Characteristic As Claimed in Claim 15*" by stating that the final rejection fails to establish a *prima facie* case of anticipation with respect to this limitation, and that Paragraph [0049] of Junod discloses nothing regarding sensing of any change in physical characteristic of a radio channel as required by claim 15. The examiner respectfully disagrees. Paragraph [0049] was cited to show that the antenna could also be used to detect hand presence. Figure 7 also shows that the antenna is used in the detection of the presence of the user's hand. As stated above, the examiner's interpretation of the claimed invention is that during the sleep mode, the hand detection circuit detects the capacitance of the antenna, where since the same antenna is used for transmitting RF signals from the RF circuit and detection, that the antenna is a "radio channel" in a physical sense, and that the capacitance detected is the "physical characteristic." The applicant is once again making a statement against the Junod reference with regards to the applicant's

invention, however, Junod does not need to teach the applicant's invention but rather only the claimed invention.

4) Junod Does Disclose Sensing a Change in Physical Characteristic of Received Signals As Claimed in Claim 20

The applicant beings their next argument against the Junod reference under the heading "*Junod Does Not Disclose Sensing a Change in Physical Characteristic of Received Signals As Claimed in Claim 20*" by stating that the final rejection simply repeats verbatim the statements made with respect to claim 15. The applicant then states that Junod is devoid of any teaching that physical characteristics of signals received over a wireless channel are sensed, much less any changes in such signals indicative of use of the device by a user. The applicant then states that Junod fails to disclose the specific further limitations of dependent claims 16 and 17. The examiner respectfully disagrees. As stated above, Junod does teach that physical characteristics of signals received over a wireless channel are sensed, therefore, Junod does anticipate the claims. Furthermore, claim 20 does not require that the channel is a "radio channel" as required by independent claims 1 and 15. Claim 20 only requires that the device has a "wireless channel" and as shown in Figure 7 and paragraph [0044] of Junod, the device is wireless, meaning that a "wireless channel" is used.

5) The Rejection of Claims 4, 5 and 14 is Proper

The applicant beings their next argument against the Junod reference under the heading "*The Rejection of claims 4, 5 and 14 is Improper*" by stating that "claims 4, 5 and 14 are not rendered obvious by Junod for at least the reasons explained above with respect to claim 1." However, as stated above, Junod does anticipate claim 1 and therefore the ground of rejection for claims 4, 5 and 14 is proper and should be maintained.

6) The Rejection of Claims 7-12, 18 and 19 is Proper

The applicant beings their next argument against the Junod reference under the heading "*The Rejection of claims 7-12, 18 and 19 is Improper*" by stating that "Hinckley is simply irrelevant to Junod and irrelevant to the claimed invention. The Junod device is not discloses as operating differently based on a manner in which it is being handled. As such, there exists no motivation for one skilled in the art to have modified Junod as proposed in the Office action." The examiner respectfully disagrees. Whether or not Junod does not disclose operating the device differently based on a manner in which it is being handled is irrelevant to the combination of the references. As explained above, Junod discloses measuring the capacitance when a user's hand approaches the device. The examiner used the Hinckley reference to show that when a hand gets close to a device that the reflection of a signal sent by the device is measured, thus using the

method of Hinckley to detect will provide for additional power saving in the Junod device. Therefore the combination of the references is proper.

The applicant then states that since Hinckley fails to cure the fundamental deficiency of Junod, and therefore, even if Hinckley were to be used to modify Junod the claimed invention still would not be achieved. However, as stated above, Junod does anticipate claim 1 and therefore the combination of the references teaches the claimed invention.

The applicant then states that Neither Junod nor Hinckley anywhere discloses or suggest detection of such physical characteristic and therefore do not render claim 7 unpatentable. However, as explained above, the combination of the references teaches claim 7, and the rejection should be maintained.

Next the applicant states that Hinckley does not disclose any of the limitations of claims 8-12 and 18 regarding reflection, detuning, sensing of transmitted signal levels received by a receiver, change in sensed signal level, or change in sensed signal level greater than a preset amount in a preset time as respectively claimed. However, as explained above and in the rejection, combination of the references teaches claims 8-12 and 18, and the rejections should be maintained.

The applicant then argues dependent claim 19, which requires controlling of a radio communication unit to transmit dummy signals over the radio channel when the device is in the low-power mode. The applicant states that "the examiner's interpretation of Hinckley's pulsing a transmitter to limit power consumption when a user is out of range, as "transmitting dummy signal" is purely conclusory and is not rationally

based or supported by any evidence." The examiner respectfully disagrees. The applicant's argument is not based upon anything with regards to the claim language. The examiner stated in the rejection what signals were the "dummy signals" and why, and therefore the statement made by the examiner is based upon evidence. There is not a limitation within the claim that states what a dummy signal is considered to be. Since a dummy signal is not defined in the claim, the examiner's interpretation of the pulsed signals of Hinckley as being "dummy signals" when the user is out of range is proper, since the signals would not be meant for communication but rather only for detection of the user, i.e. "dummy signals." Therefore the rejection of claim 19 should be maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Stephen Sherman S.S.

Conferees:

Amr Awad

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

Bipin Shalwala

BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600